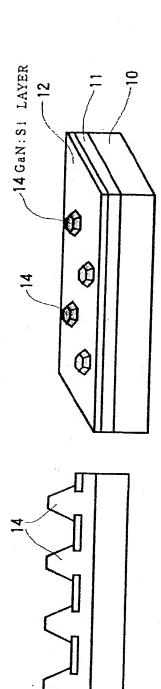
FIG.1A

-11 GaN: Si LAYER -12 MASK LAYER 10 SAPPHIRE SUBSTRATE 0 0 0

FIG.1B

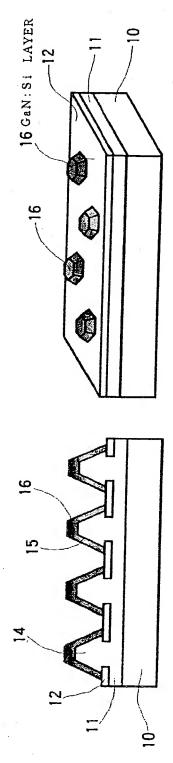
FIG.2A

F1G.2B



10

F1G.3B



F1G.3A

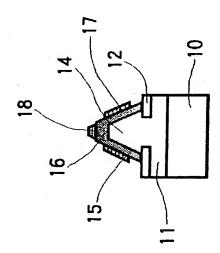
F1G.4A

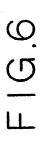
-17 p.ELECTRODE 18 P.ELECTRODE F1G.4B

F1G.5B

11 12 11 20 11 20

F1G.5A





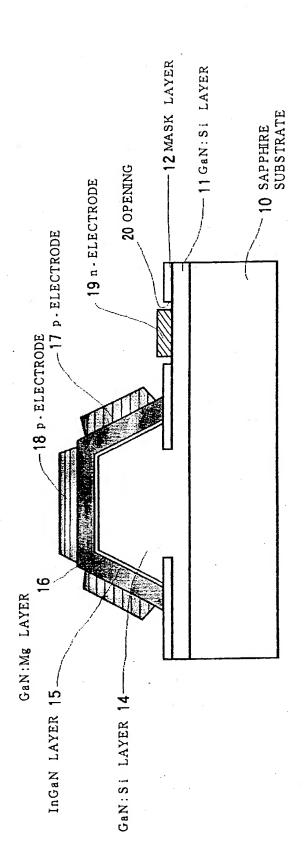


FIG.7A FIG.7B

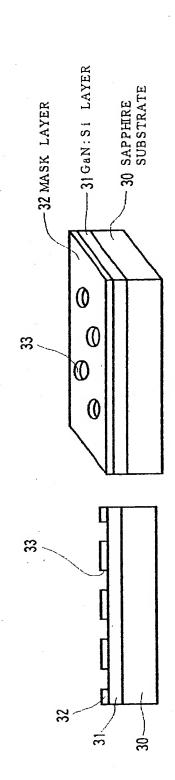
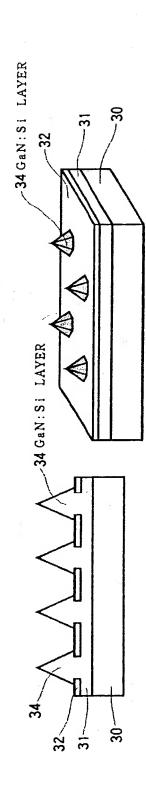


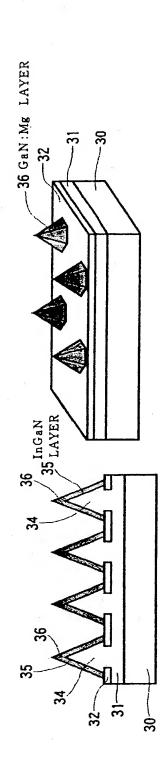
FIG.8B



F1G.8A

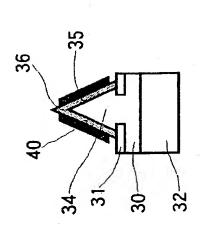
F1G.9A

F1G.9B

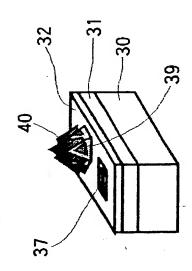


F1G.10B F1G.10A

F1G.11A



F1G.11B



F1G.12

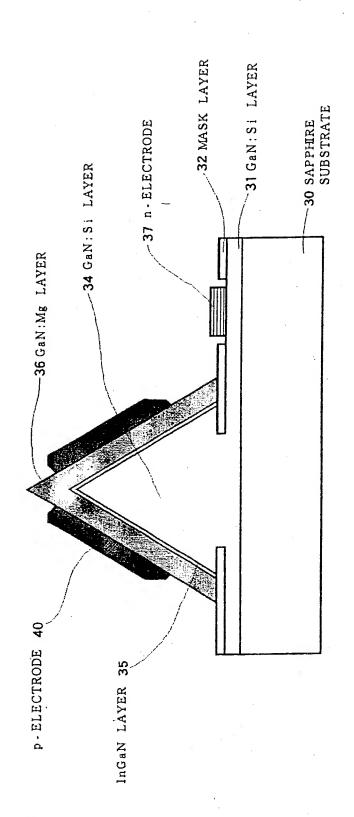
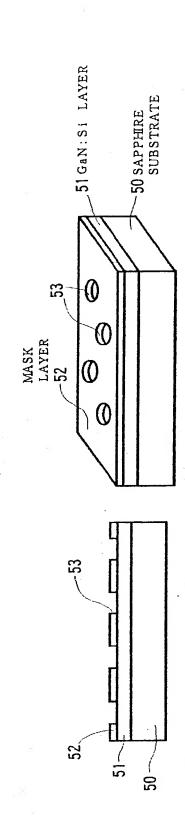
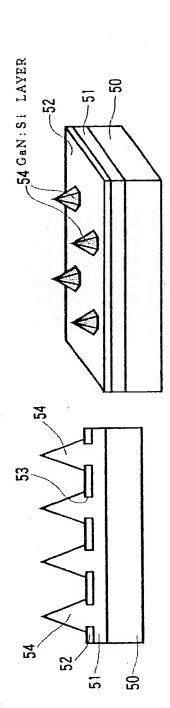


FIG.13A FIG.13B



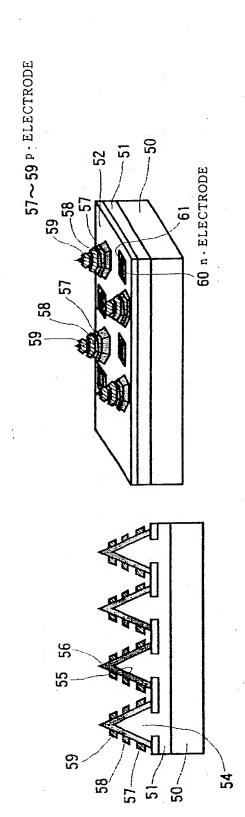
F1G.14B F1G.14A



-IOFFBB463

-52 F1G.15B F1G.15A 54

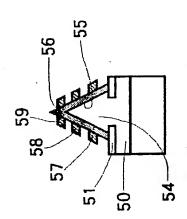
F1G.16A F1G.16B



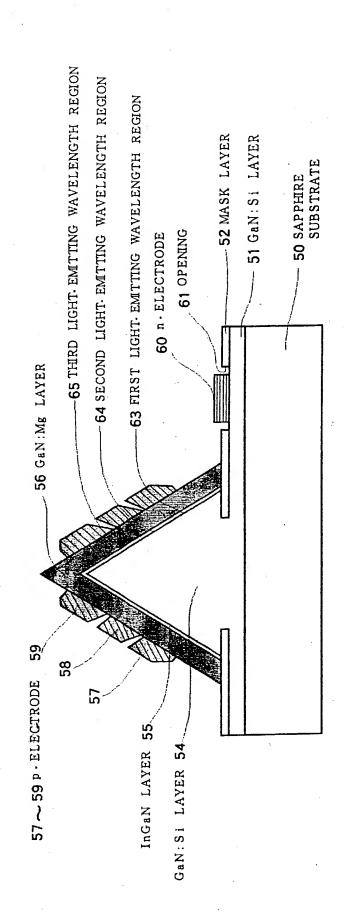
F1G.17A

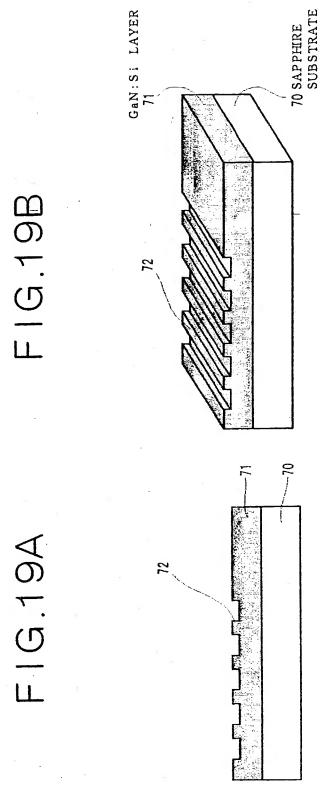
F1G.17B

57 ~ 59 p.electrode 57 58 57 51 50 60 n.electrode



F1G.18





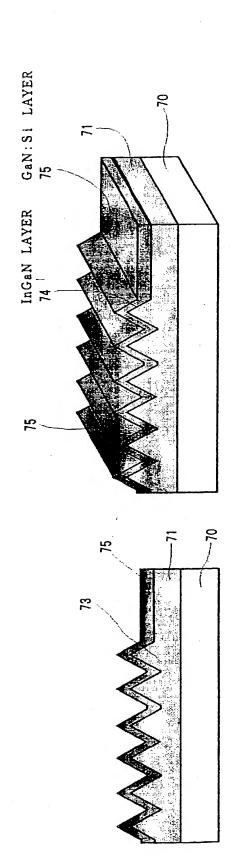
F1G.20A

2

F1G.20B

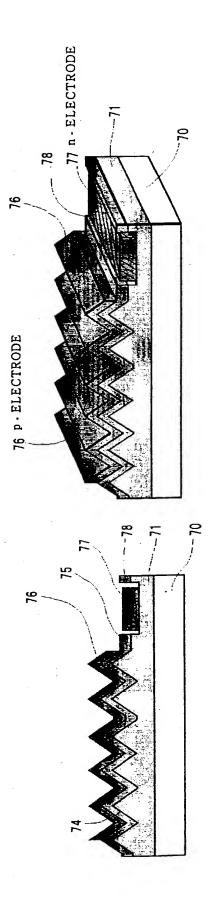
F1G.21A

F1G.21B

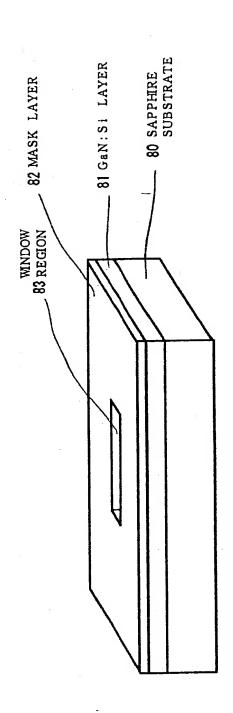


F1G.22A

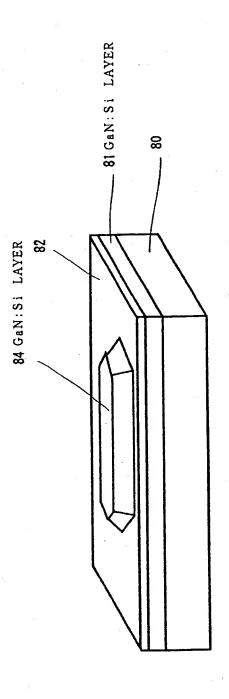
F1G.22B



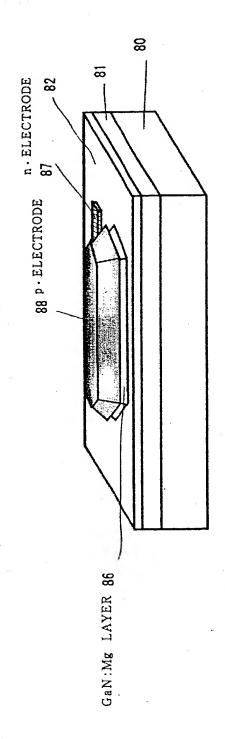
F1G.23

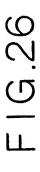


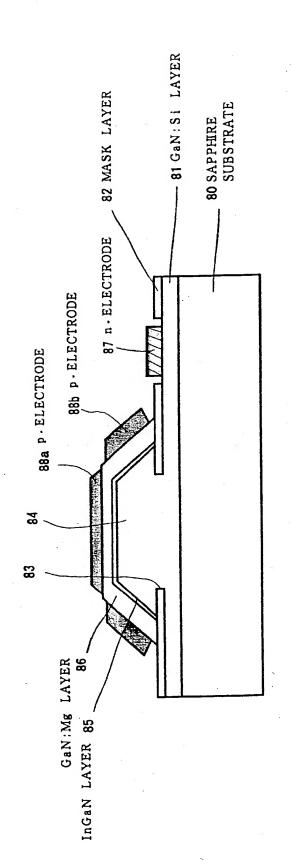
F1G.24



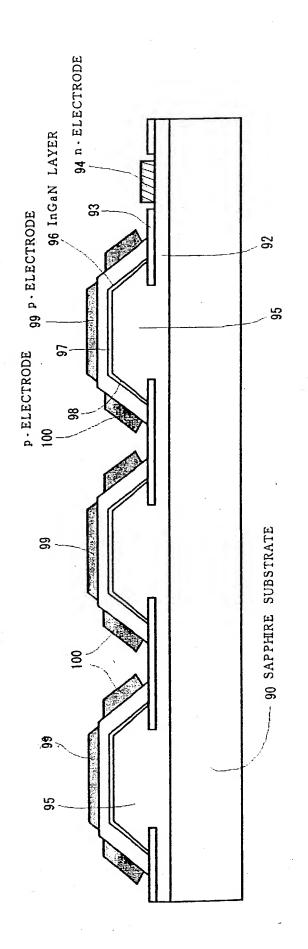
F1G.25



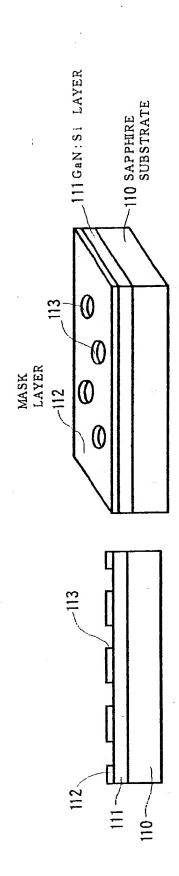




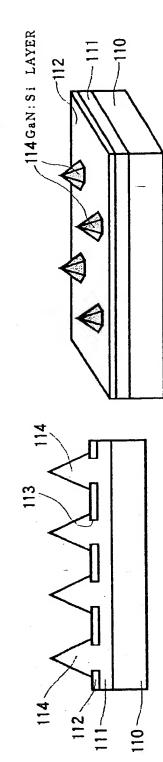




F1G.28A F1G.28B



F1G.29A



F1G.29B

F1G.30A

F1G.30B

FIG.31A FIG.31B

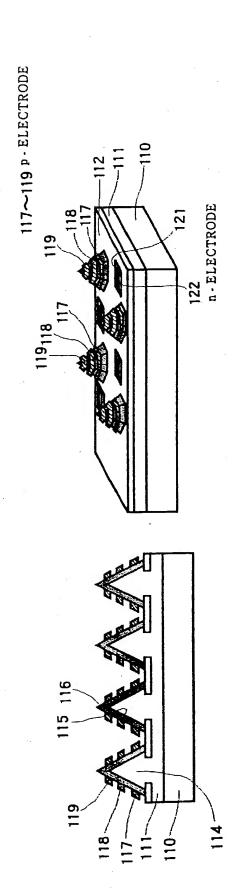
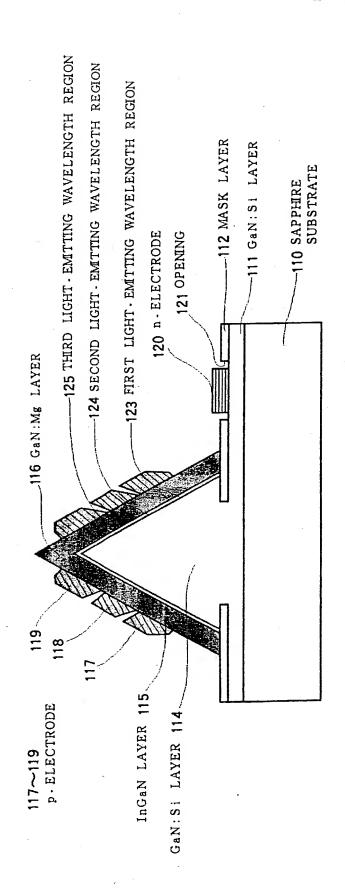


FIG.32A F

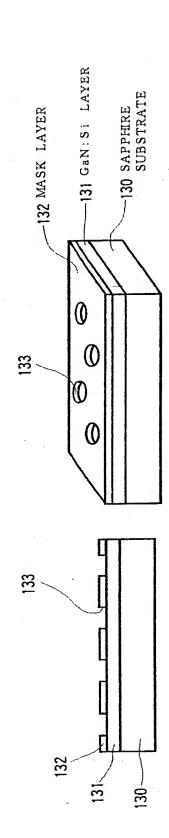
FIG.32B
117~119
117719
118
118
1177110

120 n - ELECTRODE

F1G.33

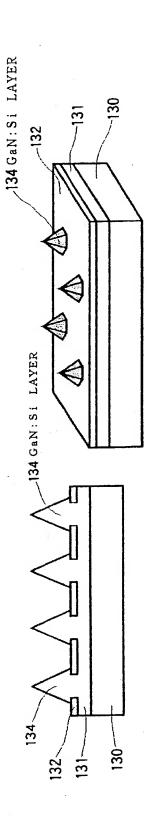


F1G.34A F1G.34B



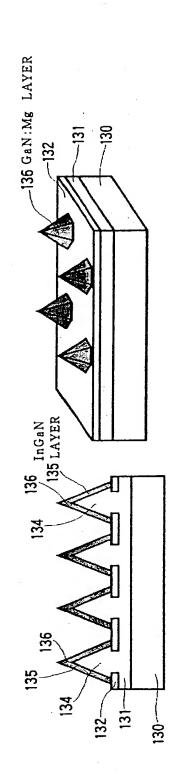
F1G.35A

F1G.35B



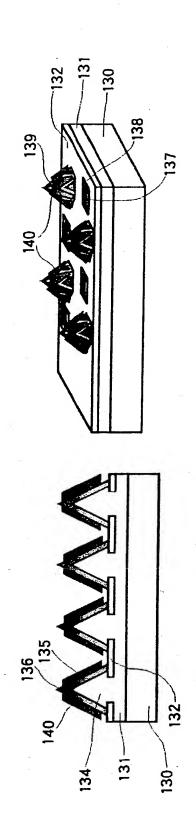
F1G.36B

F1G.36A

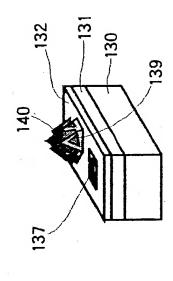


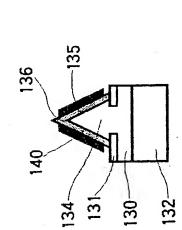
F1G.37A

F1G.37B



F1G.38A F1G.38B







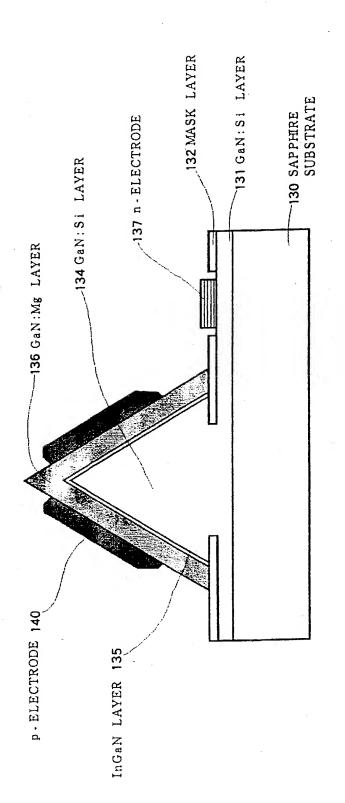
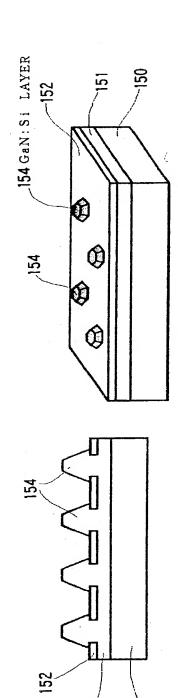


FIG.40A FIG.40B

J51GaN:Si LAYER -152 MASK LAYER 150 SAPPHIRE SUBSTRATE 0 0 152 151 150-

F1G.41A

F1G.41B



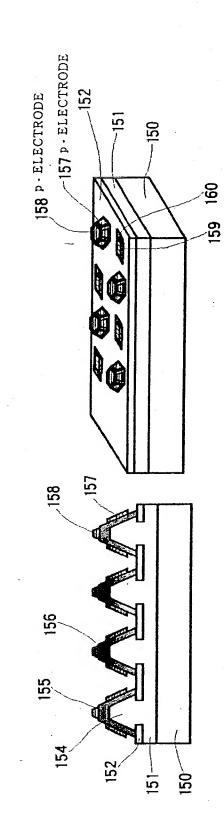
F1G.42A

F1G.42B

156 GaN: Si LAYER -152

F1G.43A

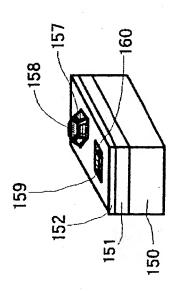
F1G.43B



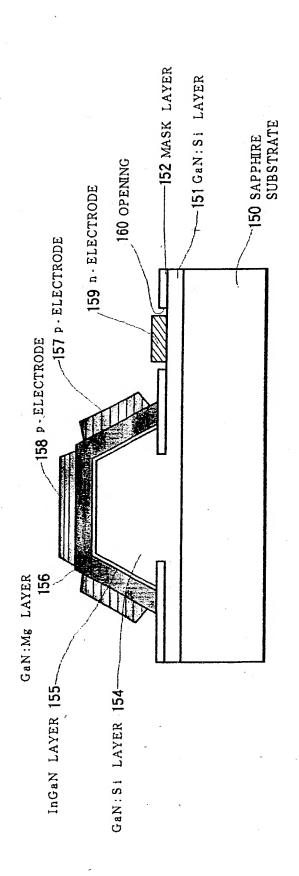
F1G.44A

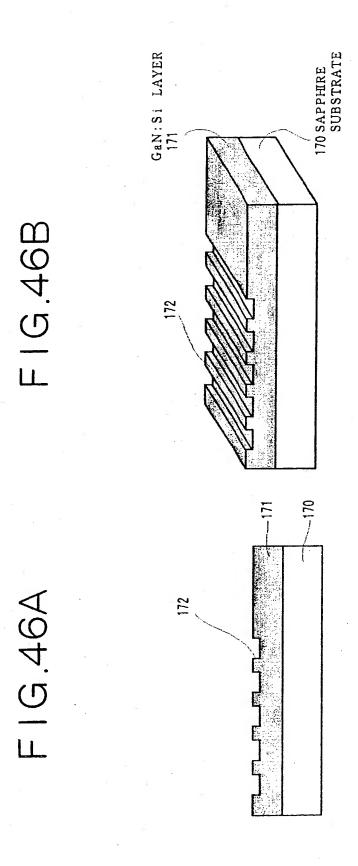
155 154 157 151

F1G.44B



F1G.45





F1G.47A

F1G.47B

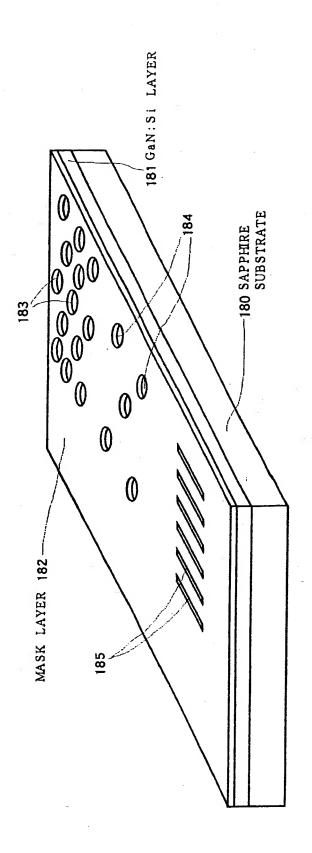
F1G.48A

F1G.48B

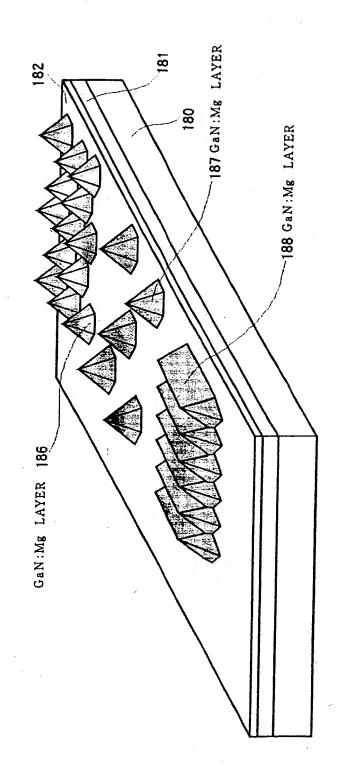
GaN:Si LAYER 175 InGaN LAYER 174

F1G.49B 176 p · ELECTRODE F1G.49A

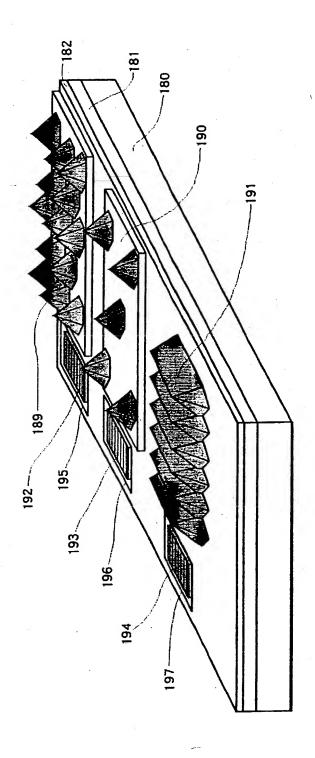
F1G.50



F1G.51



F1G.52



F1G.53

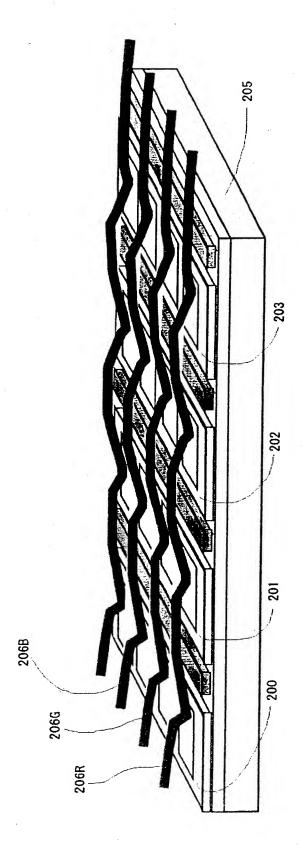


Illustration of Reference Numerals

10: sapphire substrate

11: Si-doped GaN layer

15: InGaN layer (active layer)

16: Mg-doped GaN layer

17: p-electrode

19: n-electrode

111: Si-doped GaN layer.

200: semiconductor light-emitting device